



1           6.     A system for providing gateway services in a voice  
2 communication system over a packet-switched network, comprising:  
3           an application layer that includes application services; and  
4           a platform for sessions and modules, wherein said application layer  
5 includes a gateway service and a common service.

1           7.     A system of claim 6, wherein said application layer also includes  
2 an autoforward service.

1           8.     A system of claim 7, wherein said platform includes a session  
2 manager that creates and manages sessions.

1           9.     A system of claim 8, wherein said session manager includes a rule  
2 engine.

1           10.    A system of claim 8, wherein said session corresponds to a voice  
2 call.

1           11.    A system of claim 8, further comprising:  
2           a line group manager that coordinates communication between a  
3 telephone line side and a packet-switched network side of the gateway server;  
4           a routing manager that manages route usage on the gateway server;  
5           a database access manager that monitors access to the database server;  
6           a media manager that manages voice prompt usage; and  
7           a call rating manager that determines the costs to apply to each call.

1           12.    A system of claim 11, further comprising:  
2           a parsing subsystem coupled to said routing manager.

13. A system of claim 12, wherein said parsing subsystem comprises:  
maintaining means for maintaining a parsing table;  
receiving means for receiving call information;  
determining means for determining a country code;  
retrieving means for retrieving pattern data from said parsing table;  
determining means for determining an area code;  
determining means for determining a local number;  
determining means for determining an extension; and  
outputting means for outputting a call address.

14. A system of claim 11, further comprising:  
a dynamic cache subsystem coupled to said routing manager.

15. A system of claim 12, wherein said parsing subsystem matches routes by wildcarding.

16. A system of claim 11, further comprising:  
a conversion module.

17. A system of claim 11, further comprising:  
a hardware device manager module that coordinates telephony and network components.

18. A system of claim 11, wherein said routing manager comprises:  
maintaining means for maintaining a list of routes;  
managing means for managing connections to the routing servers on the network;  
exporting means for exporting local routes to routing servers;  
importing meant for importing disseminated routes from routing servers;

7 receiving means for receiving a request for a route;  
8 obtaining means for obtaining static global and dynamic routes from  
9 routing servers;  
10 caching means for caching said static global and said dynamic routes for  
11 future use;  
12 finding means for finding matching routes for a specific telephone  
13 number; and  
14 prioritizing means for prioritizing matching routes.

1           19.     A system of claim 18, further comprising:  
2           connecting means for connecting to routing servers; and  
3           managing means for managing connections to routing servers.

20. A system for a gateway server, comprising:

- first handling means for handling calls on a packet-switched network;
- second handling means for handling calls on a telephony network;
- bridging means for bridging said calls with routes between both a packet-switched network and a telephony network;
- first interacting means for interacting with calls to collect user information;
- first interfacing means for interfacing with routing system;
- second interfacing means for interfacing with database system; and
- second interacting means for interacting with other gateway servers.

1            21.     A system of claim 20, wherein said routes comprise:  
2            querying means for querying for a route; and  
3            providing means for providing said route, wherein said route is stored  
4            locally on the gateway server.



determining means for determining a matching route; and  
second providing means for providing said matching route.

26. A system of claim 25, wherein said means for exporting local routes comprises:

requesting means for requesting exportable local routes from gateway servers;

receiving means for receiving said exportable local routes from gateway servers;

transforming means for transforming said exportable local routes into dynamic routes on the routing server;

storing means for storing said dynamic routes; and

updating means for updating said dynamic routes.

27. A system of claim 25, wherein said means for transforming an exported local route comprises:

receiving means for receiving exported local routes;

first checking means for checking a route address entry;

second checking means for checking route timing information;

third checking means for checking a route access entry;

fourth checking means for checking route ordering information;

first adding means for adding a route identity;

second adding means for adding of exporting gateway server; and

third adding means for adding a temporal stamp to said exported local route.

28. A system of claim 25, wherein said means for disseminated routing comprise:

first providing means for providing routes to a routing server;

querying means for querying the routing server for said routes configured for dissemination; and

second providing means for providing matching routes to a gateway server.

29. A system of claim 25, wherein said means for dynamic routing, comprise:

connecting means for connecting to a routing server;  
 querying means for querying a routing server;  
 providing means for providing matching routes to a gateway server; and  
 matching means for storing said matching routes on a gateway server.

30. A system of claim 25, wherein said means for static global routing, comprise:

connecting means for connecting to a routing server;  
querying means for querying a routing server; and  
providing means for providing matching routes to a gateway server.

31. A system for ordering routes, comprising:  
first checking means for checking the address of a route;  
second checking means for checking the preference of a route;  
third checking means for checking the cost estimate of a route;  
fourth checking means for checking the quality of service of a route; and  
fifth checking means for checking the type of route.

32. A system for prioritizing routes, comprising:  
first checking means for checking a route address entry;  
second checking means for checking route timing information;  
third checking means for checking a route access entry;







1 44. A method of claim 42, wherein said session corresponds to a voice  
2 call.

3 45. A method of claim 42, further comprising the steps of:  
4 coordinating communication between a telephone line side and a  
5 packet-switched network side of the gateway server with a line group manager;  
6 managing route usage on the gateway server with a routing manager;  
7 monitors access to the database server with a database access manager;  
8 manages voice prompt usage with a media manager; and  
9 determining the costs to apply to each call with a call rating manager.

1 46. A method of claim 45, further comprising the steps of:  
2 maintaining a parsing subsystem coupled to said routing manager.

1 47. A method of claim 46, wherein said parsing subsystem comprises  
2 the steps of:  
3 maintaining a parsing table;  
4 receiving call information;  
5 determining a country code;  
6 retrieving pattern data from said parsing table;  
7 determining an area code;  
8 determining a local number;  
9 determining an extension; and  
10 outputting a call address.

1 48. A method of claim 45, further comprising the steps of:  
2 maintaining a dynamic cache subsystem coupled to said routing manager.

1           49.    A method of claim 46, wherein said parsing subsystem matches  
2 routes by wildcarding.

1           50.    A method of claim 45, further comprising the steps of:  
2 connecting a conversion module.

1           51.    A method of claim 45, further comprising the steps of:  
2 coordinating telephony and network components with a hardware device  
3 manager module.

1           52.    A method of claim 45, wherein said routing manager comprises  
2 the steps of:  
3           maintaining means for maintaining a list of routes;  
4           managing connections to the routing servers on the network;  
5           exporting local routes to routing servers;  
6           importing disseminated routes from routing servers;  
7           receiving a request for a route;  
8           obtaining static global and dynamic routes from routing servers;  
9           caching said static global and said dynamic routes for future use;  
10          finding matching routes for a specific telephone number; and  
11          prioritizing matching routes.

1           53.    A method of claim 52, further comprising the steps of:  
2 connecting to routing servers; and  
3 managing connections to routing servers.

1           54.    A method of a gateway server, comprising the steps of:  
2 handling calls on a packet-switched network;  
3 handling calls on a telephony network;

4 bridging said calls with routes between both a packet-switched network  
5 and a telephony network;  
6 interacting with calls to collect user information;  
7 interfacing with routing system;  
8 for interfacing with database system; and  
9 for interacting with other gateway servers.

1 55. A method of claim 54, wherein said routes comprise:  
2 querying for a route; and  
3 providing said route, wherein said route is stored locally on the gateway  
4 server.

1 ~~56.~~ A routing server system comprising the steps of:  
2 ~~serving routes with a routing application layer; and~~  
3 providing a common object platform for memory and modules, wherein  
4 said routing application layer includes a route translation service.

1 57. A method of claim 56, further comprising the steps of:  
2 maintaining a parsing subsystem coupled to the routing server.

1 58. A method of claim 57, wherein said parsing subsystem comprises  
2 the steps of:  
3 maintaining a parsing table;  
4 receiving call information;  
5 determining a country code;  
6 retrieving pattern data from said parsing table;  
7 determining an area code;  
8 determining a local number;  
9 determining an extension; and

59. A method of routing server, comprising the steps of:

- receiving exported local routes from gateway servers;
- transforming exported local routes into dynamic routes;
- storing said dynamic routes;
- storing static global and disseminated routes;
- providing said disseminated routes to gateway servers;
- receiving requests for matching routes from gateway servers;
- determining a matching route; and
- providing said matching route.

60. A method of claim 59, wherein said means for exporting local routes comprises the steps of:

- requesting exportable local routes from gateway servers;
- receiving said exportable local routes from gateway servers;
- transforming said exportable local routes into dynamic routes on the routing server;
- storing said dynamic routes; and
- updating said dynamic routes.

1                    61.        A method of claim 59, wherein said means for transforming an  
2        exported local route comprises the steps of:  
3                    receiving exported local routes;  
4                    checking a route address entry;  
5                    checking route timing information;  
6                    checking a route access entry;  
7                    checking route ordering information;  
8                    adding a route identity;



66. A method of prioritizing routes, comprising the steps of:

checking a route address entry;  
checking route timing information;  
checking a route access entry;  
checking route ordering information;  
determining a reduced route;  
comparing a requested route with said reduced route; and  
providing a list of routes.

67. A method of determining a call address, comprising the steps of:

receiving parsed data;  
matching area code digits;  
matching phone number digits;  
matching extension digits; and  
prioritizing route addresses with matched digits.

68. A method of claim 67, wherein said matching means use wildcard

values to hold the place of number values.

69. A computer program product comprising a computer useable medium having computer program logic stored therein, said computer program logic comprising:

means for enabling a computer to handle calls received from a public switched telephone network and a packet-switched network with a gateway server;

means for enabling a computer to distribute call routing information with a routing server; and

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1           80.     A computer program product of claim 79, further comprising:  
2                 means for enabling a computer to maintain a parsing subsystem coupled  
3                 to said routing manager.

1           81.     A computer program product of claim 80, wherein said parsing  
2                 subsystem comprises:

3                 means for enabling a computer to maintain means for maintaining a  
4                 parsing table;

5                 means for enabling a computer to receive means for receiving call  
6                 information;

7                 means for enabling a computer to determine means for determining a  
8                 country code;

9                 means for enabling a computer to retrieve means for retrieving pattern  
10                data from said parsing table;

11                means for enabling a computer to determine means for determining an  
12                area code;

13                means for enabling a computer to determine means for determining a local  
14                number;

15                means for enabling a computer to determine means for determining an  
16                extension; and

17                means for enabling a computer to output means for outputting a call  
18                address.

1           82.     A computer program product of claim 79, further comprising:  
2                 means for enabling a computer to maintain a dynamic cache subsystem  
3                 coupled to said routing manager.

1           83.     A computer program product of claim 80, wherein said parsing  
2                 subsystem matches routes by wildcarding.



1            87.     A computer program product of claim 86, further comprising:  
2            means for enabling a computer to connect means for connecting to routing  
3 servers; and  
4            means for enabling a computer to manage means for managing  
5 connections to routing servers.

1            88.     A computer program product of a gateway server, comprising:  
2            means for enabling a computer to handle calls on a packet-switched  
3 network;  
4            means for enabling a computer to handle calls on a telephony network;  
5            means for enabling a computer to bridge said calls with routes between  
6 both a packet-switched network and a telephony network;  
7            means for enabling a computer to interact with calls to collect user  
8 information;  
9            means for enabling a computer to interface with routing system;  
10           means for enabling a computer to interface with database system; and  
11           means for enabling a computer to interact with other gateway servers.

1            89.     A computer program product of claim 88, wherein said routes  
2 comprise:  
3            means for enabling a computer to query for a route; and  
4            means for enabling a computer to provide means for providing said route,  
5 wherein said route is stored locally on the gateway server.

1            90.     A routing server system comprising:  
2            means for enabling a computer to serve routes with a routing application  
3 layer; and

4 means for enabling a computer to provide a common object platform for  
5 memory and modules, wherein said routing application layer includes a route  
6 translation service.

1 91. A computer program product of claim 90, further comprising:  
2 means for enabling a computer to maintain a parsing subsystem coupled  
3 to the routing server.

1 92. A computer program product of claim 91, wherein said parsing  
2 subsystem comprises:

3 means for enabling a computer to maintain a parsing table;  
4 means for enabling a computer to receive call information;  
5 means for enabling a computer to determine a country code;  
6 means for enabling a computer to retrieve pattern data from said parsing  
7 table;  
8 means for enabling a computer to determine an area code;  
9 means for enabling a computer to determine a local number;  
10 means for enabling a computer to determine an extension; and  
11 means for enabling a computer to output a call address.

1 93. A computer program product of routing server, comprising:  
2 means for enabling a computer to receive exported local routes from  
3 gateway servers;  
4 means for enabling a computer to transform exported local routes into  
5 dynamic routes;  
6 means for enabling a computer to store said dynamic routes;  
7 means for enabling a computer to store static global and disseminated  
8 routes;

9 means for enabling a computer to provide said disseminated routes to  
10 gateway servers;

11 means for enabling a computer to receive requests for matching routes  
12 from gateway servers;

13 means for enabling a computer to determine a matching route; and  
14 second providing means for provide said matching route.

1 94. A computer program product of claim 93, wherein said means for  
2 exporting local routes comprises:

3 means for enabling a computer to request exportable local routes from  
4 gateway servers;

5 means for enabling a computer to receive said exportable local routes  
6 from gateway servers;

7 means for enabling a computer to transform said exportable local routed  
8 into dynamic routes on the routing server;

9 means for enabling a computer to store said dynamic routes; and

10 means for enabling a computer to update said dynamic routes.

1 95. A computer program product of claim 93, wherein said means for  
2 transforming an exported local route comprises:

3 means for enabling a computer to receive exported local routes;

4 means for enabling a computer to check a route address entry;

5 means for enabling a computer to check route timing information;

6 means for enabling a computer to check a route access entry;

7 means for enabling a computer to check route ordering information;

8 means for enabling a computer to add a route identity;

9 means for enabling a computer to add of exporting gateway server; and

10 means for enabling a computer to add a temporal stamp to said exported  
11 local route.

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5 means for enabling a computer to check the quality of service of a route;  
6 and  
7 means for enabling a computer to check the type of route.

1 100. A computer program product of prioritizing routes, comprising:  
2 means for enabling a computer to check a route address entry;  
3 means for enabling a computer to check route timing information;  
4 means for enabling a computer to check a route access entry;  
5 means for enabling a computer to check route ordering information;  
6 means for enabling a computer to determine a reduced route;  
7 means for enabling a computer to compare a requested route with said  
8 reduced route; and  
9 means for enabling a computer to provide a list of routes.

1 101. A computer program product of determining a call address,  
2 comprising:  
3 means for enabling a computer to receive parsed data;  
4 means for enabling a computer to match area code digits;  
5 means for enabling a computer to match phone number digits;  
6 means for enabling a computer to match extension digits; and  
7 means for enabling a computer to prioritize route addresses with matched  
8 digits.

1 102. A computer program product of claim 101, wherein said matching  
2 means use wildcard values to hold the place of number values.

1 103. The gateway server according to claim 6, further including  
2 computer interface means for displaying said gateway server to a predetermined



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